



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

09/873,373

06/05/2001

Wilhelm Reiter

033275-225

5771

21839

7590

12/13/2006

BUCHANAN, INGERSOLL & ROONEY PC  
POST OFFICE BOX 1404  
ALEXANDRIA, VA 22313-1404

EXAMINER

KIM, TAE JUN

ART UNIT

PAPER NUMBER

3746

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/873,373 | <b>Applicant(s)</b><br>REITER ET AL. |  |
|                              | <b>Examiner</b><br>Ted Kim           | <b>Art Unit</b><br>3746              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,3,5,10,15,16,23,32,33 and 35-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,3,5,10,32,35,37-40 and 44-47 is/are allowed.
- 6) ☒ Claim(s) 15,16,23,33,36,41-43 and 48-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                           | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/02/2006 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 15, 16, 23, 33, 36, , 41-43, 48-51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Based on the original filed disclosure, applicant's claims 33, 36, 48 do not have adequate support from the specification such as to indicate possession of these claimed limitations of

“in order to cool thermally loaded components of the combustor and/or the turbine, first cooling lines from the compressor and/or the outlet of the compressor to components and second cooling lines from the components back to the compressor and/or the outlet of the compressor are provided, wherein a cooler is located in the second cooling lines and wherein the components to be cooled are provided with drilled film cooling openings that communicate with the first and second cooling lines, wherein means for cooling the cooling air are located in the first cooling lines”.

“in order to cool thermally loaded components of the combustor and/or the turbine, first cooling lines from the compressor and/or the outlet of the compressor to components and second cooling lines from the components back to the compressor and/or the outlet of the compressor are provided, wherein a cooler is located in the second cooling lines and wherein the combustor and/or turbine are provided with film cooling openings that communicate with the first and second cooling lines, wherein means for cooling the cooling air are located in the first cooling lines.

4. Applicant elected the Species of Figure 1, in which there is no flow from the outlet of the compressor to components, rather this alternate language only is applicable to other embodiments in Fig. 3 and Fig. 4. Only in Figure 1 is there also “a cooler is located in the second cooling lines” and “means for cooling the cooling air are located in the first cooling lines.” These limitations are not taught in combination with the language of “and/or the outlet of the compressor to components” as indicated above. Applicant’s original filed claims have also been analyzed (see claims 14-22 reproduced below) and do not properly teach these limitations **in combination** together, either.

Art Unit: 3746

“ 14. Apparatus for cooling a gas turbine system comprising: a compressor that takes in suction air on the inlet side and compresses it to compressor end air that is available on the outlet side, a combustor in which a fuel is burned by using the compressor end air while resulting in the formation of hot gas, as well as a turbine in which the hot gas is expanded while providing work output, whereby, in order to cool thermally loaded components of the combustor and/or the turbine, first cooling lines from the compressor and/or the outlet of the compressor to components and second cooling lines from the components back to the compressor and/or the outlet of the compressor are provided, and wherein the components to be cooled are provided with drilled film cooling openings that communicate with the first and second cooling lines.

15. Apparatus for cooling a gas turbine system as claimed in claim 14, wherein the cooled components include blades of the turbine, and that the drilled film cooling openings are located on the leading blade edges and/or the trailing blade edges.

16. Apparatus for cooling a gas turbine system as claimed in claim 14, wherein the second cooling lines merge into the compressor at an intermediate pressure level.

17. Apparatus for cooling a gas turbine system as claimed in claim 14, wherein an external compressor is located in the second cooling lines, and that the second cooling lines merge into the outlet of the compressor of the gas turbine system.

18. Apparatus for cooling a gas turbine system as claimed in claim 14, wherein **a cooler is located in the second cooling lines.**

19. Apparatus for cooling a gas turbine system as claimed in claim 14, wherein an injection device for injecting water into the cooling air is located in the second cooling lines.

20. Apparatus for cooling a gas turbine system as claimed in claim 14, wherein a heat exchanger through which the compressor end air flows is located in the second cooling lines.

21. Apparatus for cooling a gas turbine system as claimed in claim 20, wherein a cooler operated with a different cooling medium is located downstream from the heat exchanger.

22. Apparatus for cooling a gas turbine system as claimed in claim 14, **wherein means for cooling the cooling air, in particular in the form of a cooler are located in the first cooling lines.”**

These features of claims 22 and 18 are claimed *individually* in combination with claim 14 but *not together*. Applicant has not fairly demonstrated possession of these limitations

together. There is no disclosed embodiment/species which combines the features of all these embodiments into a single embodiment/species.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 15, 16, 23, 33, 36, 41-43, 48-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claims 33, 36, 48 refer back to their respective independent claims but fail to define the relationships between elements in the dependent claims (e.g. “a compressor,” “a combustor”, “a turbine”, and many other claimed items) and similar claim language previously referenced in the independent claims. Hence, this renders the scope of the claim indefinite as it is unclear whether the same elements are being [improperly] referenced as in the independent claims.

### ***Provisional Claim Objection***

7. Applicant is advised that in the unlikely scenario that claims 33, 15, 16, 23 be found allowable, claims 48-51 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in

Art Unit: 3746

wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

*Allowable Subject Matter*

8. Claims 2, 3, 5, 10, 32, 35, 37-40, 44-47 are allowed.

Art Unit: 3746

***Contact Information***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax number for the organization where this application is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg, can be reached at 571-272-4828. Alternate inquiries to Technology Center 3700 can be made via 571-272-3700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at <http://www.uspto.gov/main/patents.htm>



---

|                        |                   |              |
|------------------------|-------------------|--------------|
| Ted Kim                | Telephone         | 571-272-4829 |
| Primary Examiner       | Fax (Regular)     | 571-273-8300 |
| December 11, 2006      | Fax (After Final) | 571-273-8300 |
| Technology Center 3700 | Telephone         | 571-272-3700 |